Biped Robot

An Arduino based Robotics Workshop By Robokart





**About**:  
The workshop teaches you the fundamentals of building autonomous robots by integration with Atmega328 microcontroller. The workshop focuses on conceptualization and designing of complex systems and will help clear concepts related to Embedded systems in simple manner. This workshop teaches to interface SG90 Servo motors with mechanism of walking. Students will learn to control servo motors and to achieve movements of Robotic legs. This workshop is a technical practice to build a walking Robot using ATmega328 microcontroller along with servo mechanism. This workshop gives practical touch about robotics and mechanism and software knowledge for robotics.

* Certification will be provided from RoboKart.com.
* 1 Robotic Kit provided in a team of 5 members.
* Dates: 21st -22nd October,2017 at IIST, Valiamala, Trivandrum.
* Fees: ₨ 1000/- per student
* Contact:

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**What will you learn after attending this Workshop:**

* Details on microcontroller
* Programming the microcontroller using ARDUINO Interface Interfacing and controlling various devices like LED, motors, sensors etc. with microcontroller
* Making of various types of robots their algorithms and coding Application of micro controllers in industry, military, medical, home appliances, home automation etc.
* SG90 Servo Motor interfacing with microcontroller

**Kit Content:**

* Arduino Circuit board
* Programmer Cable
* SG90 Servo Motors
* Robotics Chassis set
* Power Distribution circuit
* Metallic U clamps
* Jumper wires
* Battery Snapper
* 9V DC battery
* Screw Set
* Screw driver

**Course Content:**

Session 1:

* Introduction to Robotics
* Applications of Robotics Technology
* Types of Robots
* Basic Constituents of Robot
* Microcontroller
* Actuators
* Chassis
* Sensors
* Power Supply
* Kit Distribution & Introduction to kit contents

Session 2:

* Installation of Arduino IDE and Driver software
* Interfacing of Microcontroller with Computer
* Basic Programming of Arduino
* Interfacing of SG90 Motor
* Working of Motor with Microcontroller
* Motor Control Programming
* Timer Controlled Robot

Session 3:

* Mechanism of Bipedal Robot
* 90 degree lock coding
* Assembly of Robot
* Programming for Walking Robot
* Robot Application: Walking Robot
* Session 4:
* One leg split Programming
* 180 degree Leg split programming
* Combination of Walking Robot, One leg split ,180 degree split
* Zonal Level Competition

**Target Audience:**

All year students from Physics, Electronics, EXTC, Mechanical, IT, EEE, IE, CS Engineering Stream & Android Enthusiast.